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NAME Markus Rothacher

EMAIL markus.rothacher@ethz.ch

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#### ABSTRACT

Global navigation satellite systems (GNSS) are nowadays one of the standard techniques for orbit determination. With the increasing popularity of small satellites like, e.g., the CubeSat standard, the need for an adapted small orbit determination payload increases. Therefore, we have developed a small-sized versatile GNSS payload board based on commercial-of-the-shelf GNSS receivers minimizing weight, power consumption and costs. These single-frequency GNSS receivers are unique, as they are capable of tracking 5 different GNSS, namely GPS, GLONASS, Galileo, Beidou and QZSS. The payload board features two separate antenna connectors and four GNSS receivers — two per antenna. This redundancy lowers the risk of total payload failure in case one receiver should malfunction. As the receivers are initially not intended to be used in space applications, they have been tested for vacuum, temperature variations and irradiation. Apart from the GNSS receivers, the payload also consists of three corner cubes with a diameter of 10 mm each. These corner cubes will allow the assessment of the orbit determination accuracy of the real-time and the post-processing solutions. In view of the importance of the SLR validation to reach the mission goals, a request for SLR tracking will be submitted to the ILRS. We present details on the developed payload board, the setup of the corner cube and their performance as well as the results from various test scenarios. Based on extensive GNSS signal simulator tests and on SLR simulations, we show the satellite operations planned for SLR validation and the general suitability of these low-cost receivers for orbit determination in space applications.